

Appl. No. 10/657,131
Amendment dated: February 3, 2005
Reply to OA of: November 4, 2004

REMARKS

Applicant has amended the claims to more particularly define the invention taking into consideration the outstanding Official Action. Claim 1 has been amended by adding the limitation from claim 8 thereto and claim 8 has been canceled without prejudice or disclaimer as being redundant. This amendment obviates all the prior art rejections not including claim 8 in the rejection.

In addition, several dependent claims have been added to further aspects of the invention by combining the original claims. These claims are fully supported by the specification as originally filed. Applicant most respectfully submits that all the claims now present in the application are in full compliance with 35 U.S.C. §112 and are clearly patentable over the references of record.

The rejection of claim 8 under 35 U.S.C. 103(a) as being unpatentable over Graham et al. as applied to claim 1 above, and further in view of Kato has been carefully considered but is most respectfully traversed.

Applicants wish to direct the Examiner's attention to the basic requirements of a prima facie case of obviousness as set forth in the MPEP § 2143. This section states that to establish a prima facie case of obviousness, three basic criteria first must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Section 2143.03 states that all claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art."

Appl. No. 10/657,131
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In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

Applicants also most respectfully direct the Examiner's attention to MPEP § 2144.08 (page 2100-114) wherein it is stated that Office personnel should consider all rebuttal argument and evidence present by applicant and the citation of In re Soni for error in not considering evidence presented in the specification.

A crystalline ammonium sulfate fertilizer with plural coatings is disclosed in US 3475154, Col. 11, lines 9-12, "low water-soluble crystalline ammonium sulfate coated with the first polyurethane oil layer, the second cumarone resin layer, and the third alkyd mixed with wax layer." This prior art is contrary to the subject invention in that the crystalline ammonium sulfate fertilizer is not powder, but pellet, therefore it is possible to coat the pellets with the polyurethane oil. It is not possible to uniformly coating ammonium sulfate powder with the polyurethane oil, because the ammonium sulfate powder aggregate and form agglomerates in the viscous resin (the polyurethane oil). In order to make sure the ammonium sulfate powder is uniformly coated, the subject invention uses the steps of dissolution, precipitation, solvent drying, vacuum distillation, dispersing the ammonium sulfate powder in a polyol solution, adding diisocyanate dropwise, and fluidized bed drying, as shown in Example 1 of the specification of the present application.

In summary neither the two cited references suggest a PU coated ammonium sulfate powder, nor suggests a rocket motor insulation composition containing PU coated ammonium sulfate powder. As a matter of fact, claim 1 of the present application recites "particles of said ammonium sulfate powder are encapsulated...", not just coated. Accordingly, it is most respectfully requested that this rejection be withdrawn.

The rejection of claims 1, 2, 5, 6, 7 and 9 under 35 U.S.C. 103(a) as unpatentable over Graham et al. has been carefully considered but is most respectfully

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traversed in view of the amendments to the claims adding the limitation of claim 8 to claim 1.

There is no teaching or suggestion in '284 as to coating ammonium sulfate powder with a resin before mixing with other components of a rocket motor insulation composition. No art recognizes the importance of coating ammonium sulfate powder in the rocket motor insulation composition before the subject invention. The liquid EPDM rubber will not coat the ammonium sulfate powder in US '284, because the former is non-polar and viscous, and the latter is polar and is in the power form. Instead, the ammonium sulfate powder aggregate and form agglomerates in the rocket motor insulation composition. This is like mixing salt with grease. The Examiner is very wrong in "It is the Examiners position that when above ingredients are mixed, the EPDM liquid rubber is likely to coat the ammonium sulfate particles.", page 3, lines 2-3 of the Office Action. The Examiner's position reflects the non-obviousness of the subject invention, that is the problem resulting from bare ammonium sulfate powder is not recognized. Please see the following excerpt:

"The ammonium sulfate is a water-soluble inorganic salt. As the ammonium sulfate is used to make the insulation, a portion of which will be located on the surface of the rubber material. When the insulation is exposed to a high atmospheric moisture, the exposed ammonium sulfate will takes up the moisture and a solution thereof will be formed, which causes de-bonding of the laminated insulation structure and difficult in adhesion between insulation layers. A cured insulation made thereof can be also adversely affected to endanger a rocket in operation." (page 2, lines 4-12 of the specification of the present application)

Accordingly, it is most respectfully requested that this rejection be withdrawn.

The rejection of claims 1, 2, and 5 under 35 U.S.C. 102(b) as being anticipated by Graham et al. and claim 3 under 35 U.S.C. 103(a) as being unpatentable over Graham et al. as applied to claims 1 & 2 above, and further in view of Barton has been carefully considered but is most respectfully traversed as discussed above and in view of the amendment to claim 1.

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The rejection of claim 4 under 35 U.S.C. 103(a) as being unpatentable over Graham et al. as applied to claim 1 above, and further in view of Hert et al. and I n view of the above comments and further amendments to the claims, favorable reconsideration and allowance of all of the claims now present in the application are most respectfully requested.

Respectfully submitted,

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